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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/800,010 | 03/15/2004 | Minoru Kuniyoshi | 038788.53357US | 6813 |

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| EXAMINER |
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DEGHAN, QUEENIE S

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| ART UNIT | PAPER NUMBER |
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1791

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06/08/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|--------------------------------------|---|--|
| Office Action Summary | Application No. 10/800,010 | Applicant(s) KUNIYOSHI ET AL. | |
| | Examiner QUEENIE DEGHAN | Art Unit 1791 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 May 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4, 22-26 and 30-35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 22-26, 30-35 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on May 6, 2009 has been entered.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1-4 and 23-35 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claims 1, 23 and 30 recite a melting temperature not lower than softening temperature of the dry gel. The applicant points to page 12 for support. Page 12 of the specification defines how the softening temperature of a gel is measure and does not reflect melting at a minimum of this temperature.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1, 2 and 4 are rejected under 35 U.S.C. 103(a) as obvious over Inoue et al. (5,608,123). Inoue discloses a process for producing a hybrid glassy material comprising producing a gel body by a sol-gel method using phenyltriethoxysilane as the sol-gel raw material and heating the gel body to a temperature of 120°C for 6 hours (col. 11 line 59 to col. 12 line 12), wherein this heating effectively dries and melts the gel body and ages the melt, since the temperature and duration of the heating step similarly performed by the applicant as recited in the disclosure of the application. This temperature of 120°C is the same temperature recited by the applicant in example 1-3. Furthermore, it would have been obvious to one of ordinary skill in the art at the time of

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the invention to have expected the heating temperature of the Inoue to be not lower than the softening temperature of the gel since the gel comprises a similar material (i.e. phenyltriethoxysilane) and an identical heating temperature was used.

4. Claims 23-26 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Inoue et al. (5,608,123) in view of Niida et al. (Journal of Non-Crystalline Solids 306 (2002) 292-299). Inoue discloses a process for producing a hybrid glassy material comprising producing a gel body by a sol-gel method using phenyltriethoxysilane as the sol-gel raw material and heating the gel body to a temperature of 120°C for 6 hours (col. 11 line 59 to col. 12 line 12), wherein this heating effectively dries and melts the gel body and ages the melt, since the temperature and duration of the heating step similarly performed by the applicant as recited in the disclosure of the application. It would have been obvious to one of ordinary skill in the art at the time of the invention to have expected that heating temperature of Inoue to be not lower than the softening temperature of the gel since similar raw materials as the applicants were employed in making the gel and hence would expect a similar softening temperature as disclosed by the applicant.

5. Inoue also teaches mixing a gel with other substances to create a mixture and subsequently heating the mixture for 4 hrs. at 100°C (col. 13 line 61 to col. 14 line 19). Niida et al. teach a precursor substance for low melting glass, obtained by a non-aqueous acid-base reaction method comprising Me_2SiO , P_2O_5 , and SnO (abstract). It would have been obvious to one of ordinary skill in the art at time of the invention to

utilize the low melting glass of Niida et al. as a suitable addition to the mixture of Inoue et al. in order achieve a low melting glass.

6. Claims 30-31 and 34-35 are rejected under 35 U.S.C. 103(a) as obvious over Minami et al. (2003/0124467). Minami discloses a method producing a glass material comprising producing a gel body by a sol gel method using phenyltriethoxysilane and diphenyldiethoxysilane as the raw materials, drying the gel, and heating the gel to 200°C for at least 5 minutes ([0077], [0080], [0060]), wherein this heating effectively melts the gel body and ages the melt, since the temperature and duration of the heating step similarly performed by the applicant as recited in the disclosure of the application. It would have been obvious to one of ordinary skill in the art at the time of the invention to have expected that heating temperature of Minami to be not lower than the softening temperature of the gel since similar raw materials as the applicants were employed in making the gel and hence would expect a similar softening temperature as disclosed by the applicant.

7. Claims 32-33 are rejected under 35 U.S.C 103(a) as obvious over Minami et al. (2003/0124467) in view of Minami et al. (2002/0160153). Minami '467 also disclose other possible raw materials that can be used to produce a sol gel in the examples, but does not specific mention dimethyldiethoxysilane or diethyldiethoxysilane. Minami '153 teaches a similar sol gel process as Minami '467 comprising phenyltriethoxysilane and dimethyldiethoxysilane as the raw materials and subsequently heating the gel ([0060], [0061], [0055], [0056], [0048]). It would have been obvious to one of ordinary skill in the art at the time of the invention to have alternatively utilized dimethyldiethoxysilane as a

raw material in the sol gel process of Minami '467 , since it is a known alternative raw material for predictably and successfully producing inorganic-organic hybrid glassy materials.

Response to Arguments

1. Applicant's arguments filed May 6, 2009 have been fully considered but they are not persuasive. Regarding Inoue, the applicant argues Inoue discloses 120°C as the drying temperature, whereas the gel of the present application was melted at 120°C. As discussed above, since similar materials are involved and the same temperatures were employed, one skilled in the art would have expected the gel of Inoue to gone through the steps of being dried, melted and aged since the gel was held at a temperature similar to the recited temperature.

2. Regarding Minami '467, the applicant alleges the gel was not melted because the heating temperature of 200°C was lower than the softening temperature of the gel and point to a catalyst. It is not clear what the catalyst has to do with the melting temperature. The applicant further notes :

“Minami '467 actually discloses that the gel became fluid by drying the film at room temperature and then keeping the gelled film at 200°C for about 10 minutes, and that projections on the film were completely gelled and cured by further heating at 200°C for 20 minutes.”

3. Minami does teach drying at room temperature and the gel becoming fluid when heated at 200°C. Contrary to the applicant's arguments, this fluidity is an indication that melting has occurred. Furthermore, as discussed above, since similar materials are

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involved and the same temperatures were employed, one skilled in the art would have expected the gel of Inoue to go through the steps of being dried, melted and aged since the gel was held at a temperature similar to the recited temperature.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to QUEENIE DEGHAN whose telephone number is (571)272-8209. The examiner can normally be reached on Monday through Friday 9:00am - 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Queenie Dehghan/
Examiner, Art Unit 1791